



# **Northern Tier Transmission Group (NTTG) Perspectives**

**Rich Bayless - NTTG  
Western Conference of  
Public Service Commissioners  
Regional Transmission Organizations Panel  
June 16, 2008**

**“To ensure efficient, effective, coordinated use & expansion of the member’s  
transmission systems in the Western Interconnection to best meet the needs  
of customers & stakeholders. “**



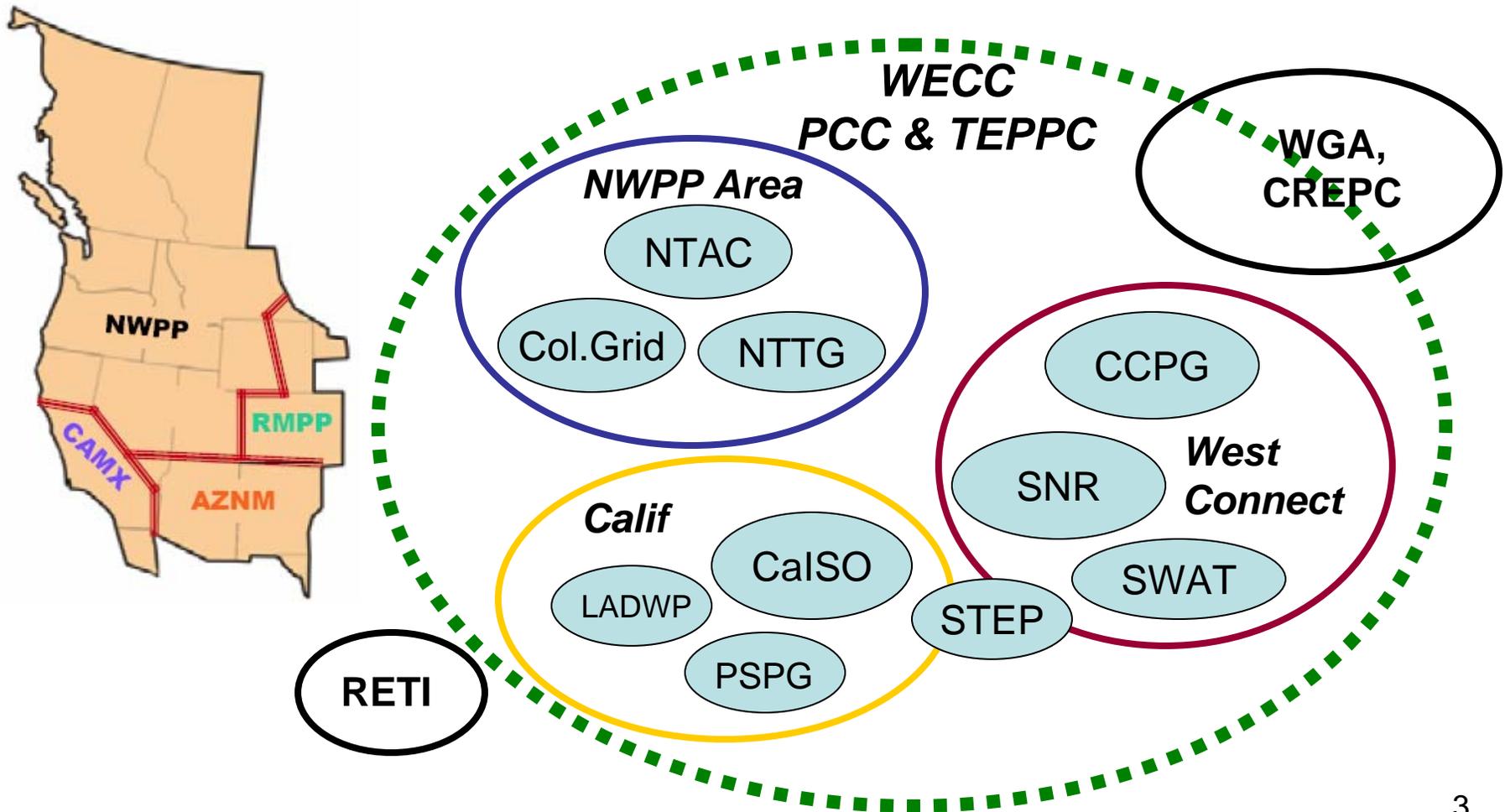
# RTO Objectives

- Provide large footprint commercial transmission system
  - Multiple TO's who's combined systems act like a single transmission system
- Open Access that provides Comparable Transmission Service
  - For similarly situated customers
  - Network and PTP/through Customers
- Standard commercial terms and conditions, transparency
- Facilitates power markets
- Complies with relevant and latest FERC Orders
- **And now...facilitates new Energy Policy and requirements**



# Transmission Organizations

(RTOs, rtos, groups, pools, etc)





# NWPP Participating Organizations

## Why are there three Transmission Orgs in the NW

- Alberta Electric System Operator\*
- Alcoa Power Generation, Inc.
- Avista Corporation\*
- B.C. Hydro
- B.C. Transmission Corp.\*
- Bonneville Power Administration\*
- Chelan County PUD\*
- ColumbiaGrid
- Cowlitz County PUD
- Deseret Generations & Transmission Coop.
- Douglas County PUD\*
- Eugene Water & Electric Board
- FortisBC
- Grant County PUD\*
- Idaho Power Company\*
- NorthWestern Energy\*
- PacifiCorp\*
- Pend Oreille County PUD
- Portland General Electric - Power Supply
- Portland General Electric\*
- Powerex
- Puget Sound Energy\*
- Sacramento Municipal Utility District\*
- Sea Breeze Pacific RTS
- Seattle City Light\*
- Sierra Pacific Power\*
- Snohomish County PUD
- Tacoma Power\*
- Turlock Irrigation District\*
- U.S. Bureau of Reclamation
- U.S. Corps of Engineers
- Western Area Power Administration
  - Upper Great Plains\*

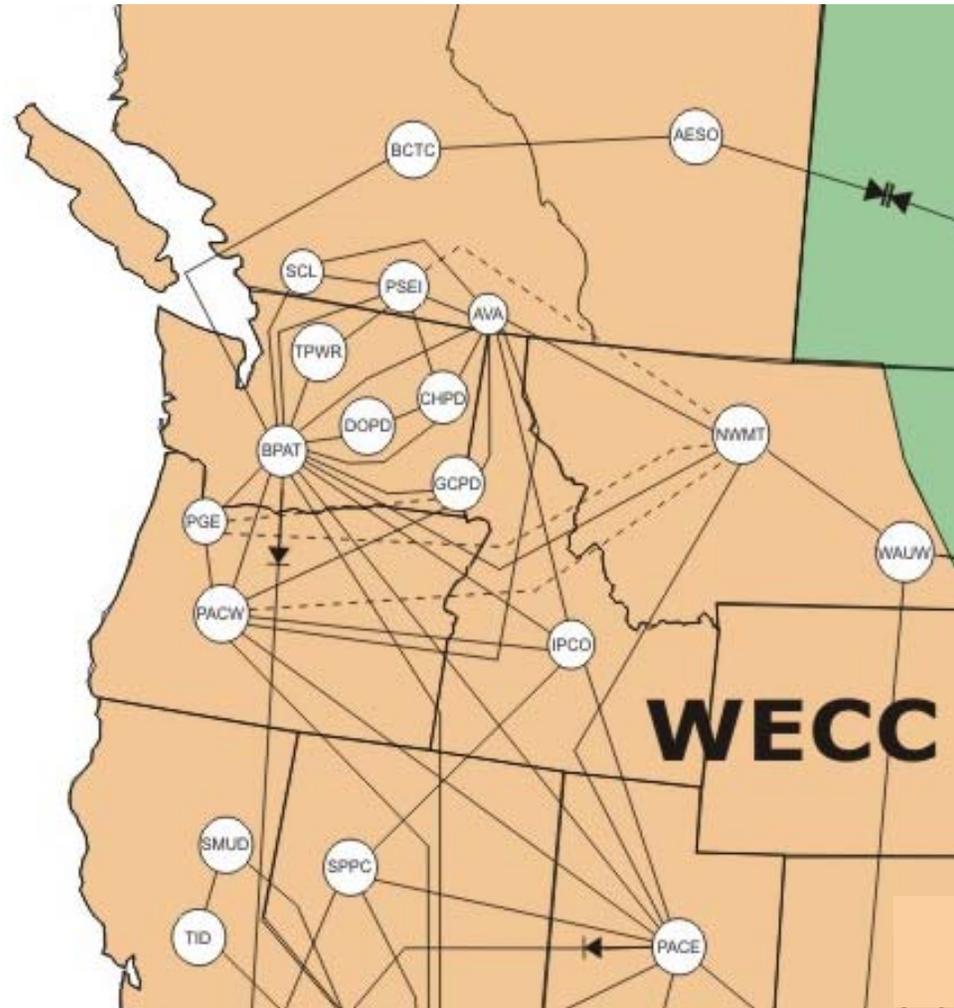
## Northwest Demographics

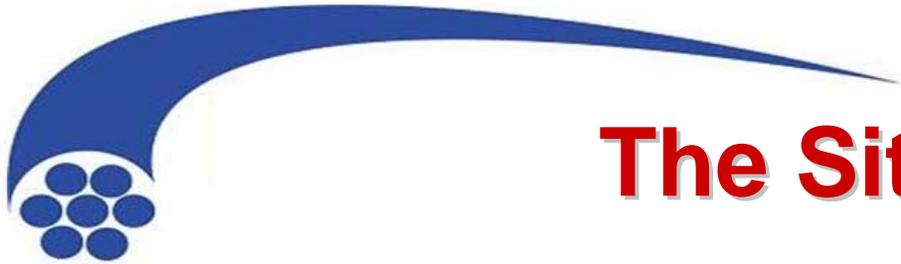
- 8 U.S. States
- 2 Canadian Provinces
- Federal, Public, Private, Provincial Ownership
- International Border (Treaties associated with water)
- Non-Jurisdictional as well as Jurisdictional
- Preference Act – Public Law 88-552
- 160 Consumer-owned electric utilities
- 19 Control Areas (35 in the Western Interconnection)
- ~90,000 Megawatts Total Resources (44% WI)
- ~ 50% Peak load of the WI
- ~ 50% Energy load of the WI
- Automated Reserve Sharing Procedures
- Hydro Coordination
- Hydro Thermal Integration
- Hydro located on the West (BC, ID, OR, WA)
- Thermal located on the East (AB, MT, NV, UT, WY)



# NWPP Balancing Areas

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• <b>Summer Peak</b></li> <li>• PAC – 18.36%</li> <li>• AESO – 14.77%</li> <li>• BCTC – 13.18%</li> <li>• BPA – 11.74%</li> <li>• SMUD – 8.06%</li> <li>• PGE - 6.17%</li> <li>• PSE – 5.69%</li> <li>• IPC – 5.53%</li> <li>• AVA - 3.33%</li> <li>• SPP - 3.33%</li> <li>• NWMT - 2.71%</li> <li>• SCL - 2.35%</li> <li>• TPWR - 1.04%</li> <li>• TID – 1.01%</li> <li>• GCPD - 0.90%</li> <li>• CHPD - 0.66%</li> <li>• DOPD - 0.35%</li> <li>• WAUW - 0.21%</li> </ul> | <ul style="list-style-type: none"> <li>• <b>Winter Peak</b></li> <li>• PAC - 17.03%</li> <li>• BCTC – 16.17%</li> <li>• AESO – 15.27%</li> <li>• BPA – 14.40%</li> <li>• PSE – 7.40%</li> <li>• PGE – 5.96%</li> <li>• SMUD – 4.21%</li> <li>• IPC - 4.03%</li> <li>• AVA - 3.33%</li> <li>• SCL - 2.69%</li> <li>• NWMT - 2.57%</li> <li>• SPP - 2.54%</li> <li>• TPWR - 1.51%</li> <li>• CHPD – 0.89%</li> <li>• GCPD - 0.80%</li> <li>• TID - 0.52%</li> <li>• DOPD – 0.49%</li> <li>• WAUW – 0.17%</li> </ul> |
| <ul style="list-style-type: none"> <li>• <b>ColGrid – 25.71%</b></li> <li>• <b>NTTG – 27.20%</b></li> <li>• <b>Other – 46.59%</b></li> </ul>  | <ul style="list-style-type: none"> <li>• <b>ColGrid – 31.03%</b></li> <li>• <b>NTTG – 23.63%</b></li> <li>• <b>Other – 45.34%</b></li> </ul>  |





## The Situation

- Loads growing
- Resource uncertainty – new & existing
  - Fuel Costs
  - Regulatory Mandates:
    - RPS, Efficiency, GHG
  - Green and Intermittent Renewables
    - Characteristics
    - Location
    - Tax Credits



## The Situation, continued

### Transmission

- Existing system fully utilized, and depreciated.
- Stringent new Reliability Standards
- Risks, uncertainty, and cost recovery of new mega transmission projects
  - FERC Order 679
  - State Regulation
- Major transmission construction takes longer than generation construction
- Major new transmission spans multiple states
- Cost of new transmission: Steel, ROW, Xformers Line Routing, ROW availability & cost, NIMBY, NIETC, permitting
- OATT Process and Tariff Pricing
  - Individual request process and clogged queues
  - Pancakes and/or incremental rates



# The Perfect Transmission System Would Be:

- Transmission that is sized to allow for flexibility in size, configuration, timing
  - Capacity to spare to all corners of the system
  - Captures renewable and load diversity, allows for resource uncertainty,
  - Adaptable to policy mandates
- Balancing Areas are consolidated or Virtual Large Control Areas
  - To Maximize benefits of diversity and renewables
- Re-Dispatch, Regulation, A/S, Capacity markets
  - To support intermittent resources and changing resource patterns
  - To facilitate new ways to regulate
    - Use of Concentrated Solar to shape wind
- Easy to use and obtain service, schedule
- Transmission Pricing
  - Fairly allocates costs to all users
  - Regional Tariff for PTP
  - Non-discriminatory rates and terms
  - Elimination of pancakes
- Coordinated initiatives and operation of all systems



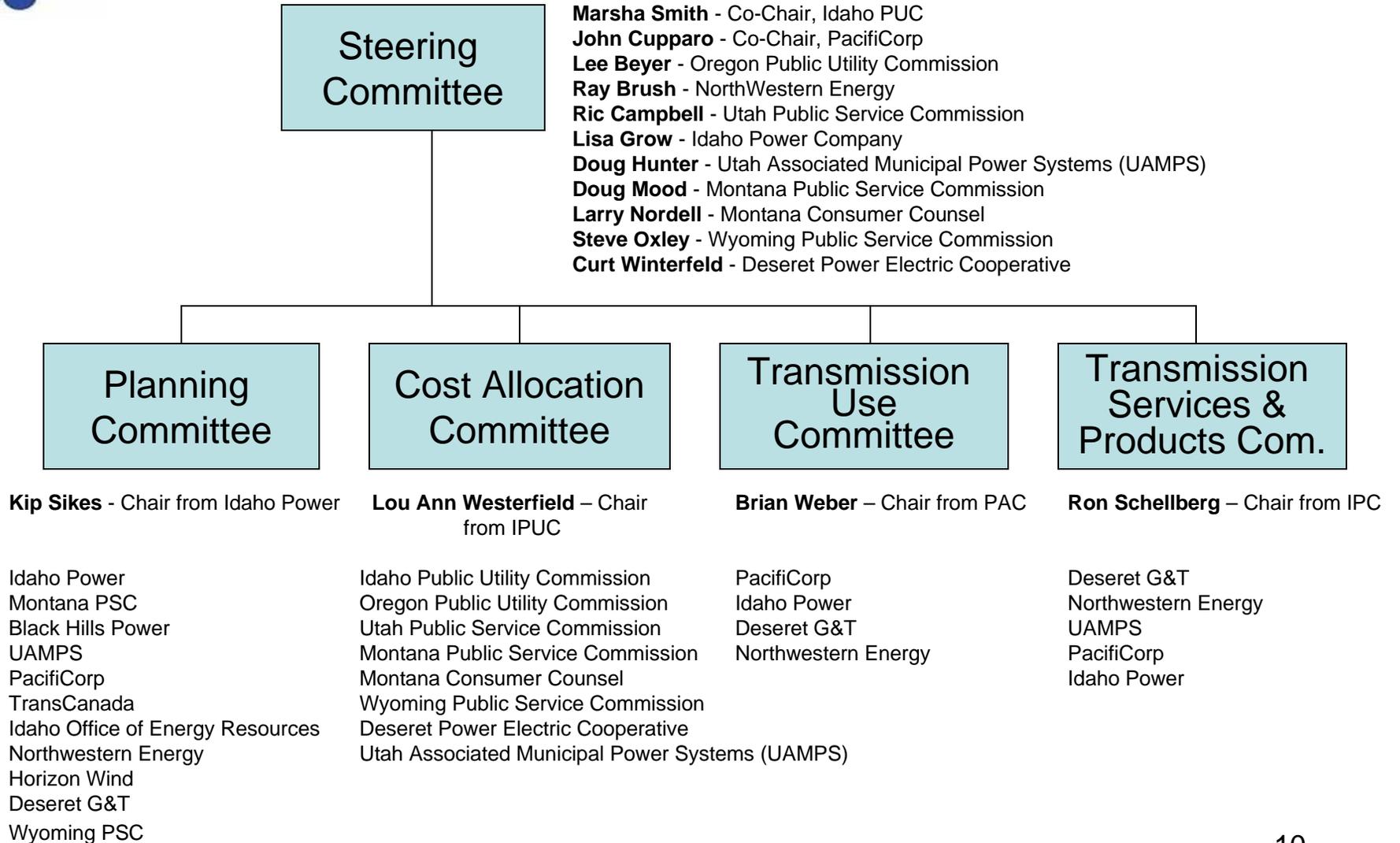
# NTTG – Working towards the Perfect Transmission system

- NTTG established originally to carry forward beneficial initiatives from Grid West
  - Combined member Transmission Planning
  - Area Control Error Diversity Interchange (ADI)
  - Transmission Use and ATC
- Goals are
  - Create the equiv of a single system of like minded/situated TP's for customers
  - Accomplish needed initiatives and transmission additions
    - Results first
  - Evolve the organization as required
    - Not get bogged down in structure debate or politics
  - Use existing organizations and structure where possible - avoid duplication
- Join with other Transmission Organizations, WECC, WGA
  - Via initiatives
  - Coordination and cooperation

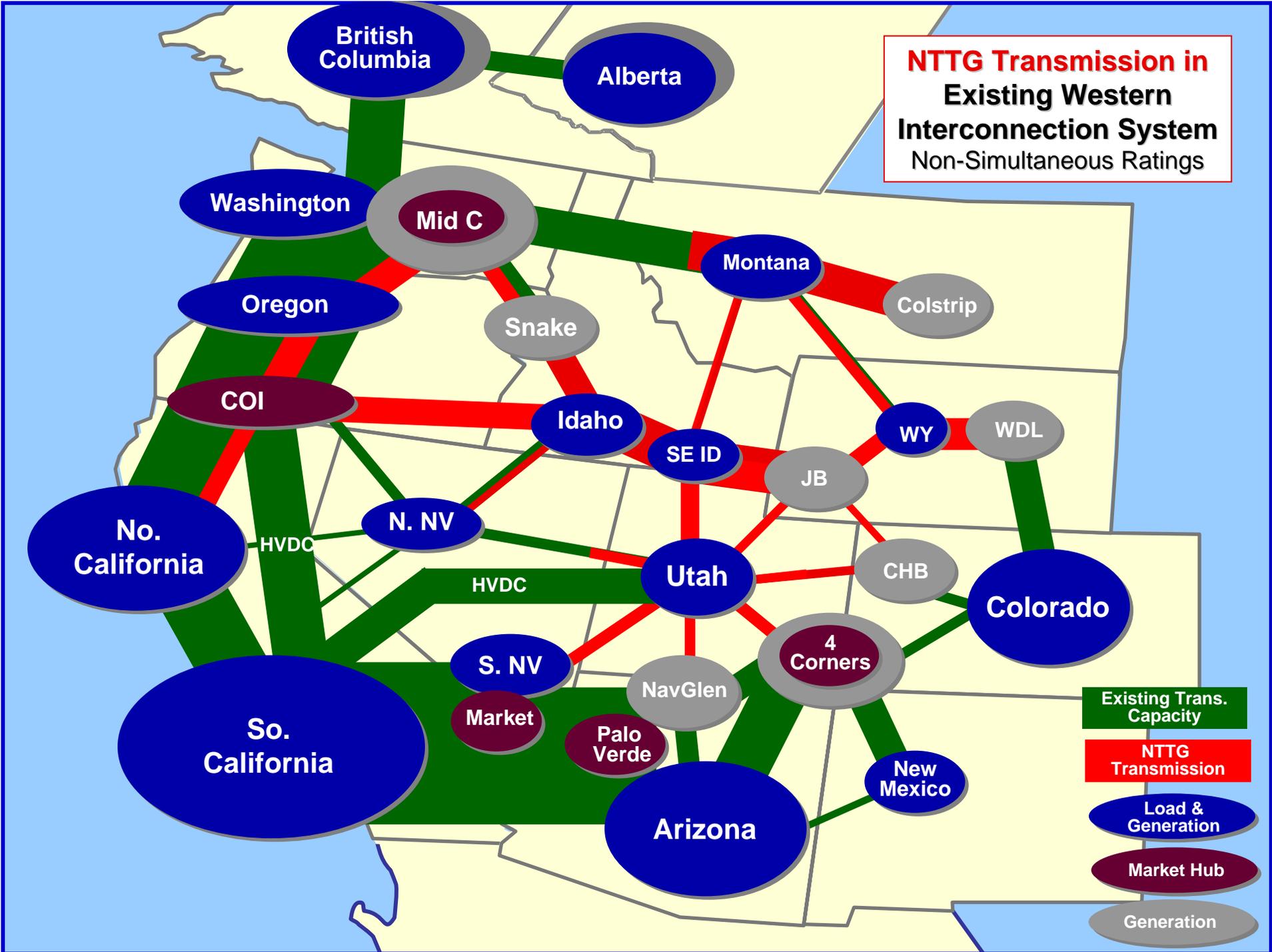




# NTTG Org & Members



**NTTG Transmission in Existing Western Interconnection System**  
 Non-Simultaneous Ratings



Existing Trans. Capacity

NTTG Transmission

Load & Generation

Market Hub

Generation



# Current Activities

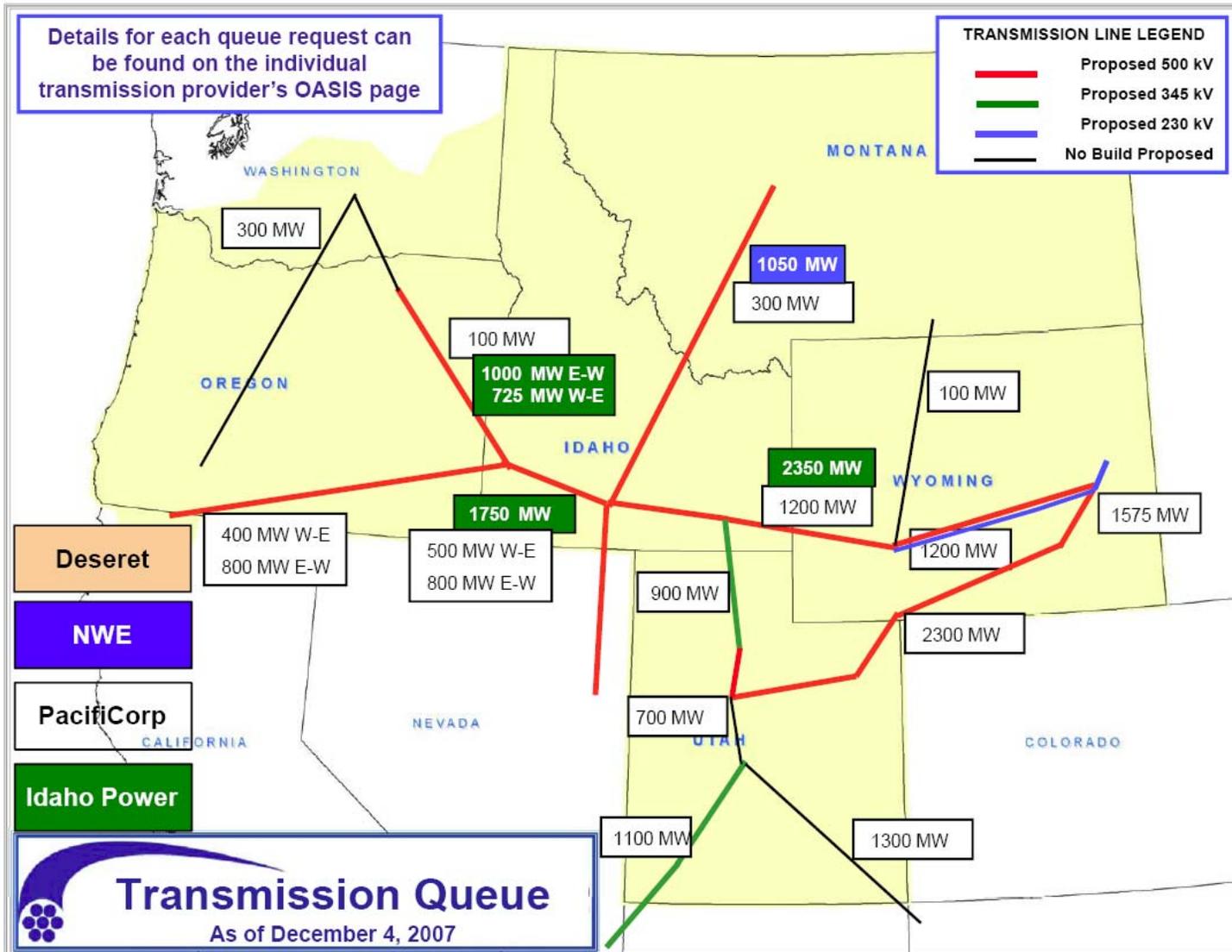
- Fast Track Projects underway
  - Hub & Spoke flexible plan
- Planning - Biennial Plan ala 890 Started
  - Open & Transparent stakeholder process includes all needs
  - Economic Studies
  - FERC Order 679
- Cost Allocation Committee
  - Up front review of cost allocation for level of certainty
- Use Committee
  - Common ATC methods and terminology
  - ATC: Schedule and actual's over key paths to identify congestion and expansion opportunities
  - Permitting Protocol and State Requirement catalog
- Transmission Services and Products
  - ADI Phase I Pilot
  - ADI Phase II – Exploring Virtual control area consolidation & other
- Transmission Pricing
  - Member Initiatives
    - Cluster Queue requests, studies,
    - Open Season
    - Long Term Service contracts

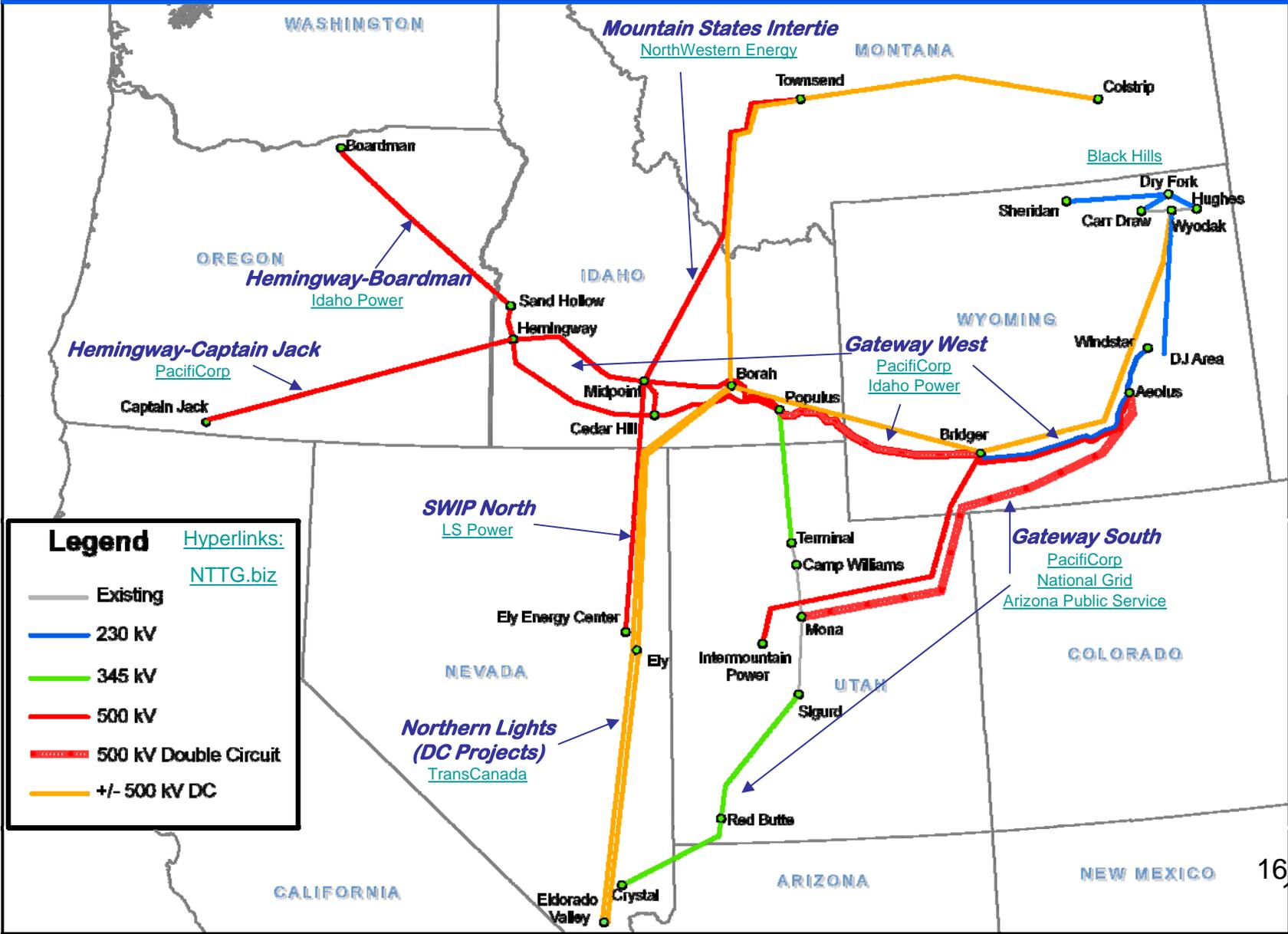






# Queue Requests on Member Systems









# Looking Down the Road

- Need for Regional Initiatives
  - Unification via cooperation and coordination – not forced consolidation
  - Joint initiatives:
    - ADI
    - Planning
    - Re-Dispatch, Balancing and A/S Markets
    - Pricing
    - Operations
  - Need State Participation for Multi-State initiatives